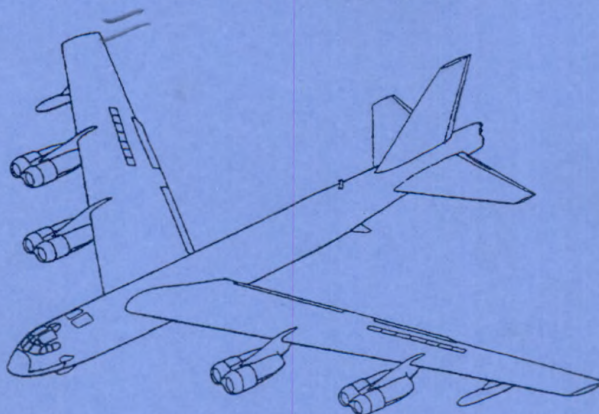


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USE FOR TRAINING WITH TECHNICAL DATA



B-52H SERVICING



**On-the-Job Training Improvement Program
Program No. C6ACZM52TPB1001V5**

August 1996
Revision No. 5
Replaces All Previous Editions

AETC Training Support Squadron/TSICS
6058 Aspen Ave.
Hill AFB, Utah 84056-5805
DSN 777-0761 or 777-0159

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INTRODUCTION

As the front cover reveals, this program provides a standardized training approach to performing servicing tasks on a B-52H aircraft. It is designed for you to use in the training environment. This guide is broken down into easy to manage sections and lessons. Section I covers the AN/ASQ-151 (EVS) Turret window wash tank filling. Section II covers the engine and CSD oil servicing. Section III will cover the Body Hydraulic System service and partial draining. Section IV details the Pneumatic system servicing, and Section V will deal with the Pneudraulic servicing procedures. Each of these sections will have a Pretask Preparation to aide you in beginning the tasks. Section VI is a review of Safety, FOD and DOP.

Remember, this guide is not a stand-alone product. It must be used with the most current version of technical data. Although this guide was reviewed by Subject Matter Experts (SMEs), it is not normally used during an evaluation. However, it is a good reference for training prior to the task.

In summary, this guide was developed to standardize training in the field. It is not a controlled publication, which means you can have a copy to put in your pocket or even take it home for study if you would like.

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NOTES

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SECTION I

INTRODUCTION

This section covers the information necessary to perform the AN/ASQ-151 (EVS) Turret Window Wash Tank Filling task on the B-52H aircraft. Pretask preparation and window wash tank servicing will be included.

PRETASK PREPARATION

APPLICABLE TO

1. B-52H aircraft
2. B-52H maintenance personnel

METHOD OF ACCOMPLISHMENT

1. Explanation
2. Discussion
3. Demonstration
4. Performance

OVERVIEW

This lesson covers the actions necessary to perform the AN/ASQ-151 Turret Window Wash Tank Filling task on the B-52H aircraft.

PREREQUISITES

The student should be familiar with:

1. Aircraft Safe for Maintenance
2. Applicable Technical Orders
3. Operation of necessary equipment

OBJECTIVE

Given tech data, perform an AN/ASQ-151 Turret Window Wash Tank Filling task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

1. TECH DATA.

- 1B-52H-2-2JG-4 (AN/ASQ-151 Turret Window Wash Tank Filling)

2. TOOLS.

- mini kit (inventory)

3. EQUIPMENT.

- water servicing cart
 - distilled water
 - general serviceability
 - fluid level
- water truck (if necessary)

□ Some bases do not use a water cart. Under normal flightline conditions, the water servicing cart should be full enough to fill your aircraft's window wash tank. If not, have them call for a distilled water truck to fill the water servicing cart. A water truck should only be used if a water servicing cart is not available.

4. AIRCRAFT ITEMS

- Check AFTO FORM 781s.
 - no red X conditions that would prevent the safe accomplishment of the task
 - no danger tags installed that would affect the safe accomplishment of the task
 - review open discrepancies which could adversely affect the task

AN/ASQ-151 TURRET WINDOW WASH TANK FILLING

- ❑ Before continuing, inspect all of the equipment for serviceability. Also review safety and procedures.

1. STATICALLY GROUND THE SERVICING UNIT.

- Position cart and lock/chock wheels.
- Connect to same static ground as the aircraft.

NOTE



The aircraft should be effectively grounded to a static ground by means of an approved static grounding cable, at all times it is on the ground and stationary. Explain to your trainee that the aircraft should already be grounded. If not, have your trainee review these items prior to grounding the aircraft (IAW T.O 1B-52H- 2-2JG-1), or the servicing unit.

CAUTION



Connect the ground cable to the earth ground prior to connecting to the aircraft.

- Inspect ground wire bayonet plug for:
 - corrosion
 - weakness
 - loose locknut
- Replace bayonet if heavily dented or deformed.
 - particularly around portion which connects to aircraft grounding receptacle
- Inspect cable clip jaws for any defect that would prevent a good connection.
- Inspect ground wires for broken strands.
 - replace if more than one-third strands are broken
- alert aircraft will be grounded only at the forward wheel well location
- ❑ When the aircraft is parked or if routine maintenance is being performed, one static grounding cable is adequate.

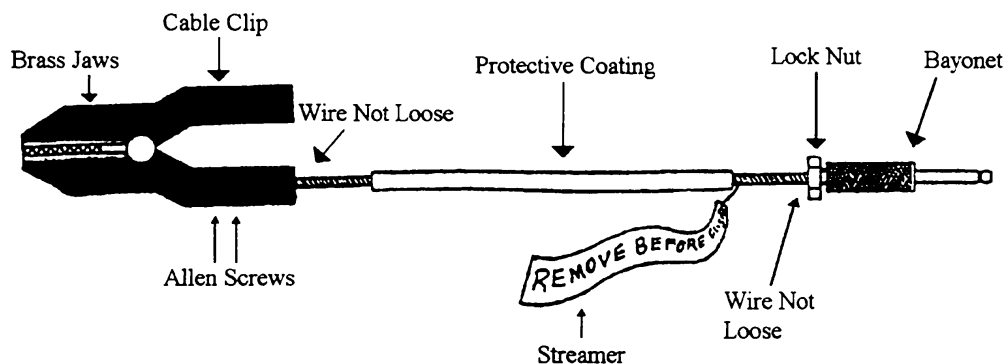


Fig. 1-1

- Check security and serviceability of the mounting of aircraft receptacle(s) to be used for grounding.
- If a water truck must be used to fill the window wash tank, park the truck 90 degrees to the nose of the aircraft with the full length of the hose extended. Park the truck at least 25 feet from the aircraft, then statically ground the truck in the same manner as the cart.

NOTE



Service water tank when ground temperatures are above 4.4 deg. C (40 F) with distilled water or water with solids less than 10 parts per million and filtered through a 200 mesh screen. If water with solids less than 10 parts per million is not obtainable, tap water may be used in case of emergency.

2. ADJUST THE SERVICING CART WATER FLOW RATE.

- to minimum flow

3. OPEN FILLER NECK ACCESS DOOR.

- Disengage six quick-release fasteners.

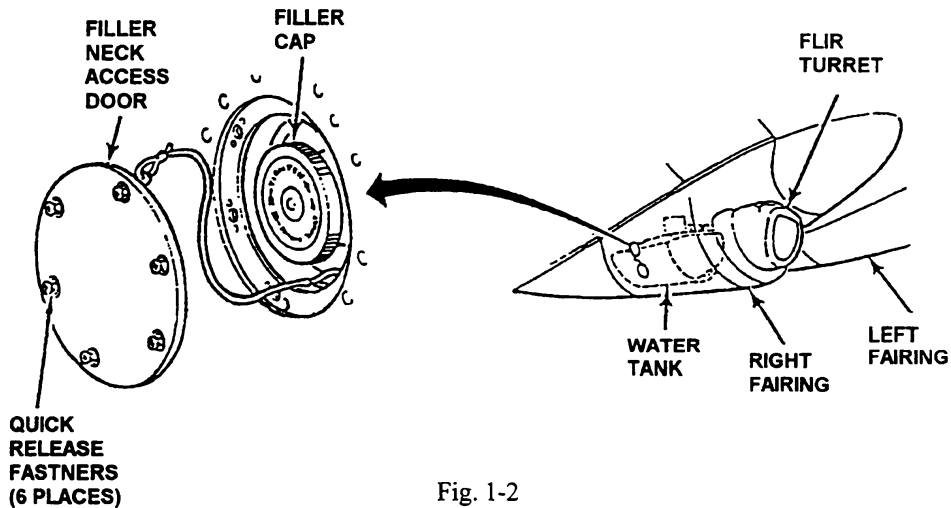


Fig. 1-2

4. REMOVE THE FILLER CAP.

CAUTION



Ensure that servicing unit is adjusted for a minimum flow rate.
Excessive water pressure could damage the water tank.

5. HOLD NOZZLE AND DIRECT WATER INTO THE FILLER NECK.

- Fill tank until water is visible in the bottom of the filler neck.

6. INSTALL FILLER CAP.

7. CLOSE FILLER NECK ACCESS PANEL.

- Secure six quick-release fasteners.

LESSON REVIEW

This concludes Lesson I AN/ASQ-151 Turret Window Wash Tank Filling. This lesson review exercise provides you with a method of assessing your proficiency.

1. What is the proper position for parking a water truck?
 - a. 45 degrees to the nose; 10 feet from the aircraft
 - b. 45 degrees to the nose; 25 feet from the aircraft
 - c. 90 degrees to the nose; 10 feet from the aircraft
 - d. 90 degrees to the nose; 25 feet from the aircraft
2. What settings is the service cart water flow rate adjusted to prior to servicing?
 - a. minimum flow
 - b. maximum flow
 - c. 10 Gallons Per Minute (GPM)
 - d. 20 Gallons Per Minute (GPM)
3. When should water truck be used?
 - a. water servicing cart is less than 1/2 full
 - b. water servicing cart is not available
 - c. water servicing cart is less than 3/4 full
 - d. water servicing cart is less than 7/8 full

REFERENCES

1B-52H-2-2JG-4
00-25-172

AN/ASQ-151 Turret Window Wash Tank Filling
Aircraft Grounding/Bonding

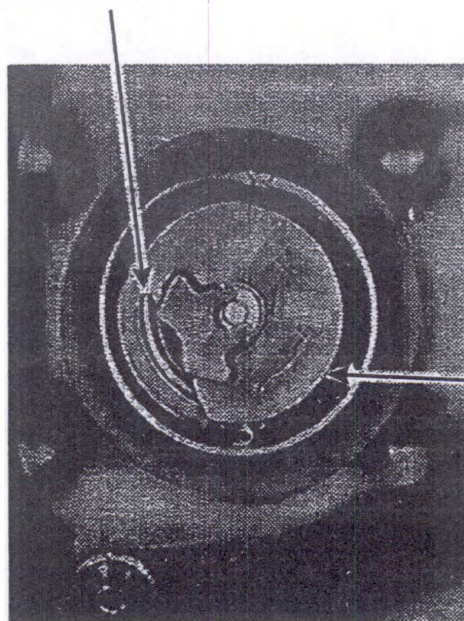
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This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

2. REMOVE OIL TANK CAP.

- Visually check oil level.
- Check condition of oil cap.
- Check condition of oil cap seal.
- Ensure screen is installed in filler neck.

FILLER NECK



OIL TANK CAP

Fig 2-2

WARNING

Contact with MIL-L-7808 oil can cause skin irritation, stain clothing and soften paint. The skin should be cleaned thoroughly upon contact; and painted surfaces should be cleaned immediately. All areas in which MIL-L-7808 oil is used must be well ventilated.

CAUTION

Make sure servicing containers and opening accessories are clean. Dispose of unused oil remaining in containers. Overfilling the tank will result in oil being blown through the vent system. Under no circumstances should the tank be filled above lower lip of the filler neck (hot oil service) or above the bottom of the tank screen (cold oil service).

NOTE

The only positive way to make sure that tank is properly filled is visually determining the oil level. If less than 1 hour has elapsed since engine shutdown, service oil to lower edge of filler neck (hot oil service). If more than 1 hour has elapsed since engine shutdown, visually check for oil level above bottom of oil tank screen in filler neck. If no oil is visible in the oil tank screen, motor engine with starter per T.O. 1B-52H-2-7JG-1 for 2 minutes and service oil, if required, to bottom of oil tank screen (cold oil service).

3. FILL THE OIL TANK.

- hot oil service
 - to lower lip of the filler neck
- cold oil service
 - to bottom of tank screen

4. INSTALL CAP ON OIL TANK FILLER NECK.

- Ensure properly locked.

5. CLOSE TANK ACCESS DOOR.

- Secure fasteners/snap latch.
 - Ensure panel is properly secured and flush.
 - Remove stand.
- ☐ An AFTO Form 781H entry is required for the amount of oil serviced for each individual engine. Also ensure you inventory the tools, and equipment, and clean the area after completion.

LESSON REVIEW

This concludes Lesson I Engine Oil Tank Service. This lesson review exercise provides you with a method of assessing your proficiency.

1. What will happen if you overfill the oil tank?
 - a. oil will be sucked through the stator vanes
 - b. oil will be sucked through the vent system
 - c. oil will be blown out through the stator vanes
 - d. oil will be blown out through the vent system
2. What is the only positive way to ensure the oil tank is properly serviced?
 - a. visually
 - b. sight gage
 - c. hydrometer
 - d. motor engine and check the pressure

REFERENCES

T.O. 1B-52H-2-2JG-3

Servicing

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

2. REMOVE CSD OIL TANK ACCESS DOOR.

- Position stand.
 - properly locked
 - safety pins installed
 - do not stand on rails
 - do not stand on steps when raising or lowering
- located in upper afterbody cowl
- Disengage fasteners/Snap-latch.

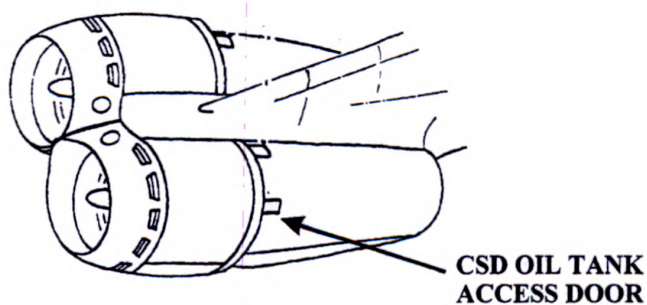


Fig. 2-3

3. THOROUGHLY CLEAN CSD OIL TANK SCUPPER.

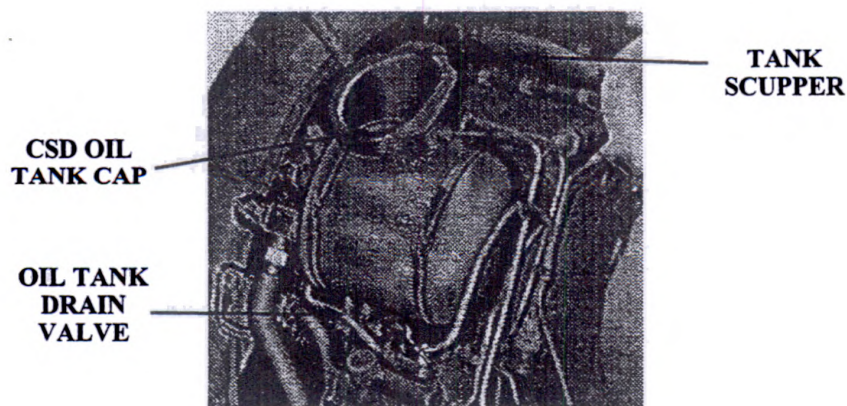


Fig. 2-4

4. REMOVE FILLER CAP.

- Pull chain on filler cap to lift filler cap handle.
- Rotate filler cap handle to open position.
- Remove filler cap from filler neck.
- Inspect cap seal for deterioration.

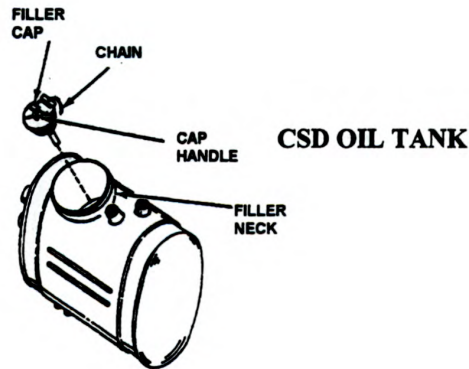


Fig. 2-5

NOTE



Accomplish step 5 only if CSD is being initially serviced from empty.

5. ENSURE CSD OIL COOLER AND OIL TANK DRAIN VALVES ARE CLOSED.

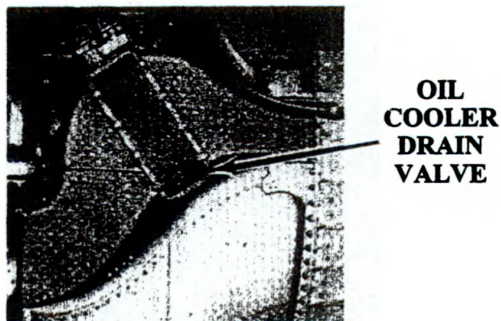


Fig. 2-6

6. POSITION DRAINAGE CONTAINER UNDER CSD TURRET DRAIN.

- to catch spillover

7. FILL CSD OIL TANK.

- Fill with oil to spillover level.

8. INSTALL OIL TANK FILLER CAP.

- Depress cap handle until handle snaps overcenter (locked) position

9. CLOSE CSD OIL TANK ACCESS DOOR.

- Engage fasteners/snap latch.
- Remove stand.

- Ensure you inventory the tools and equipment, and clean the area after completing the task.

LESSON REVIEW

This concludes Lesson II CSD Oil Tank Service. This lesson review exercise provides you with a method of assessing your proficiency.

1. If more than 1 hour has elapsed since engine shutdown, how should you check for proper servicing?
 - a. start and operate at idle RPM for 1 minute
 - b. start and operate at idle RPM for 2 minutes
 - c. start and operate at idle RPM for 5 minutes
 - d. start and operate at idle RPM for 3 seconds
2. When engine(s) have just been shutdown and air is off, what condition could still exist?
 - a. the CSD is still pressurized and may spray hot air
 - b. the CSD is still pressurized and may spray hot oil
 - c. the CSD is still pressurized and will read a low quantity
 - d. the CSD is still pressurized and will read a high quantity

REFERENCES

T.O. 1B-52H-2-7JG-1

Engine Starting and Shutdown

This image shows a full page of blank, lined paper. It features approximately 20 evenly spaced horizontal black lines across its entire width, typical of standard notebook or school paper. The background is a solid off-white color, and there are no margins, text, or other markings present.

SECTION III

INTRODUCTION

Section III covers the actions necessary to service/drain the main hydraulic reservoirs on the B-52H aircraft. The first part of this section covers Pretask Preparation. Lesson I covers the Hydraulic System Depressurization task. Lesson II covers the Main Hydraulic System Reservoir Servicetask, while Lesson III deals with the Main Hydraulic System Reservoir (partial) Draining task. Safety must always be stressed while performing maintenance on an aircraft.

PRETASK PREPARATION

APPLICABLE TO

1. B-52H aircraft
2. B-52H maintenance personnel

METHOD OF ACCOMPLISHMENT

1. Explanation
2. Discussion
3. Demonstration
4. Performance

OVERVIEW

This portion covers the actions necessary to obtain all the equipment necessary to perform a main hydraulic system depressurization, reservoir service and partial draining on the B-52H aircraft.

PREREQUISITES

The student should be familiar with:

1. Aircraft Safe for Maintenance
2. Applicable technical order

1. TECH DATA.

- 1B-52H-2-2JG-1 (Power Application)
- 1B-52H-2-2JG-2 (Hydraulic Reservoir Service)

2. TOOLS.

- mini kit (inventory)

3. SUPPLIES.

- hydraulic fluid (MIL-H-5606)
- clean rags
- safety wire (.032)
- headsets (2 each)
- ground cord
- quick-disconnect (QD)
 - if not with hydraulic cart
- hand operated air pump
 - bicycle or auto tire
- drain hose assembly
 - fabricated per T.O. 1B-52H-2-2GA-1
- suitable container
 - bucket
 - approved hydraulic fluid drainage container

4. EQUIPMENT.

- hydraulic filler and pressurization cart
 - including support chain on the end of servicing cart hose
- The quick-disconnect may be a controlled item that must be checked out from the tool crib, and that the support chain might be attached. Ensure you understand the procedures for your particular base.
- power unit (400+/-5 cycles, 205+/-5 volts)
- stand (B-4 or B-5)

5. CHECK AFTO FORM 781s.

- safe to perform the task
- no red X conditions that would prevent the safe completion of the task
- no danger tags installed that affect the safe accomplishment of the task
- review open discrepancies which could adversely affect the task

NOTE



When servicing hydraulic fluid reservoirs, ensure clean hydraulic fluid is used. All precautions should be taken to prevent contamination. Only clean, unopened cans of MIL-H-5606 hydraulic fluid will be used to fill the filler and pressurization cart and aircraft hydraulic reservoirs.

- Ensure engines are shut down, and all external air pressure sources disconnected.

NOTE



Prior to filling or checking the hydraulic reservoirs, check that following conditions prevail:
Outboard Wing System - tip protection gear extended, spoilers down, hydraulic system pressure zero, and accumulator serviced to proper air preload value.
Inboard Wing System - spoiler down and hydraulic system pressure zero.
Body System - main landing gear extended, bomb doors open, brakes released, IFR doors closed, hydraulic system pressure zero, and accumulators serviced to proper air preload value.
Following information lists reservoirs by system and capacities of each.

Outboard wing hydraulic system	3.5 gallons
Inboard wing hydraulic system	3.5 gallons
Body hydraulic system	6.7 gallons
Body system standby reserve	1.0 gallons
rudder and elevator system	2.1 gallons

Body system reserve tanks are automatically replenished by lines common to normal body system reservoirs and require no servicing.

- Always refer to applicable T.O. for correct reservoir capacities.

LESSON I

MAIN HYDRAULIC SYSTEM DEPRESSUIZATION

OVERVIEW

This lesson covers the actions necessary to perform the Main Hydraulic System Depressurization task on the B-52H aircraft.

OBJECTIVE

Given tech data, perform the Main Hydraulic System Depressurization task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

A. INBOARD/OUTBOARD WING SYSTEM DEPRESSURIZATION

WARNING



Check that spoiler area is clear prior to spoiler or airbrake operation to prevent personnel injury or damage to equipment.

- Before you climb into the cockpit, ejection seat safety must be reviewed. Safety items include initiators, parachutes, seat pins, seat motor operation and tools in uniform pockets.

1. OPERATE SPOILERS.

- Move pilot control wheel.
- until no movement of spoilers is noted

2. GAIN ACCESS TO INBOARD/OUTBOARD AIR SERVICE VALVE.

- inboard located on flap well bulkhead
- outboard location
 - open hinged access panel 595L or 596R
 - aft of reservoir access door
- Remove 13 quick-release fasteners.

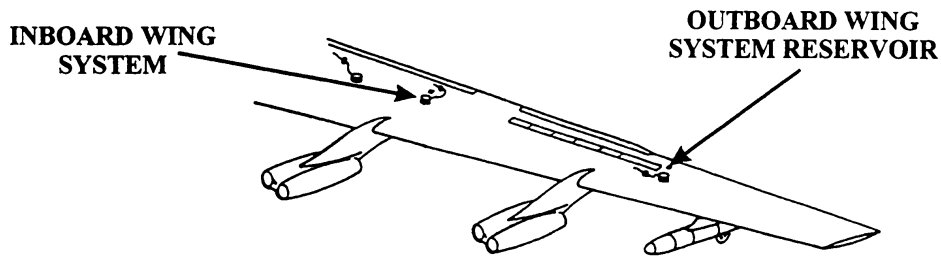


Fig. 3-1

- Ensure you wear eye protection before relieving pressure off resevoir.

3. RELIEVE INBOARD/OUTBOARD WING SYSTEM RESERVOIR AIR PRESSURE.

- Depress air service valve.

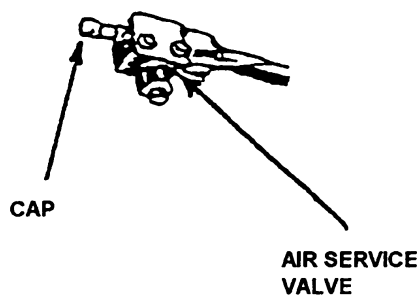


Fig. 3-2

- The body and inboard hydraulic air pressure relief systems are interconnected. When you relieve pressure on the air service valve, you relieve both the body and the inboard hydraulic system pressure.

B. BODY SYSTEM DEPRESSURIZATION

1. CONNECT MAIN EXTERNAL ELECTRICAL POWER.

- per T.O. 1B-52H-2-2JG-1

2. REMOVE LEFT FORWARD STEERING BYPASS KEY.

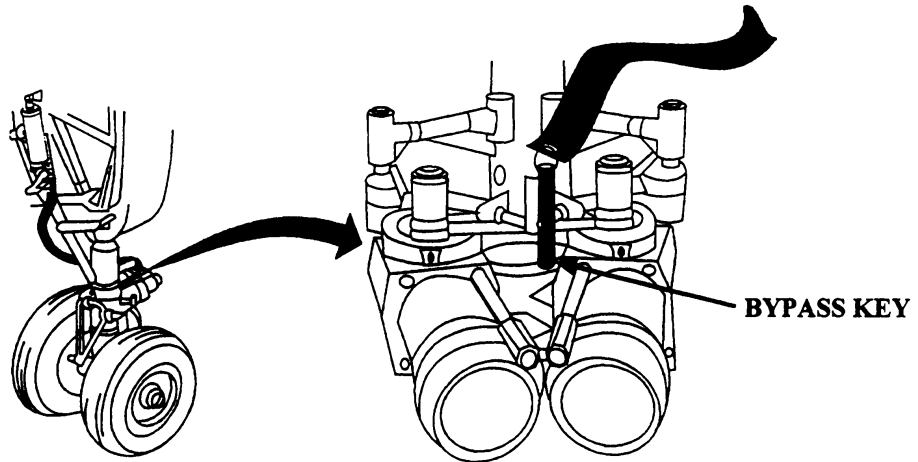


Fig. 3-3

3. PLACE LEFT BODY SYSTEM STANDBY PUMP SWITCH IN STBY POSITION.

- pressure indicator reads 3000psi (+ or - 250)

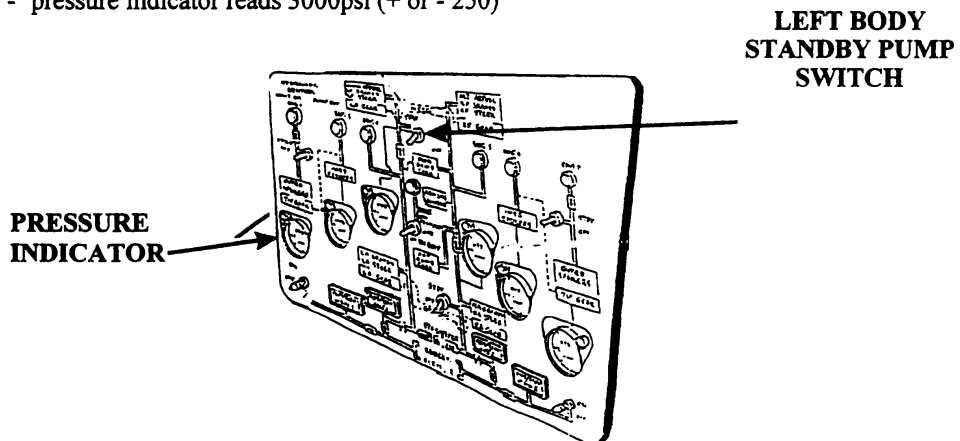


Fig. 3-4

4. OPERATE BRAKE PEDALS.

- until brake accumulators pressure is completely bled off
- right forward, left aft, and right aft landing gear

5. PLACE LEFT BODY STANDBY PUMP IN OFF POSTION.

6. OPERATE BRAKE PEDALS.

- until brake accumulator pressure is completely bled off
- left forward
- If you stop pumping the brakes when the accumulator reaches 1000 psi, the system may not be completely depressurized. Ensure (confirmed by the ground observer) that all brake accumulators are bled down to the proper air preload.
- The right body hydraulic standby pump does not require operation. When operating the left body standby pump in conjunction with the brake pedals, this opens the slave metering valve which depletes the left and right MLG brakes. Also, the IFR accumulator is automatically depressurized when the Master Refuel Switch is placed in the OFF position.

7. DISCONNECT MAIN EXTERNAL ELECTRICAL POWER.

- per T.O. 1B-52H-2-2JG-1

8. REINSTALL LEFT FORWARD STEERING BYPASS KEY.

9. RELIEVE APPLICABLE BODY SYSTEM RESERVOIR AIR PRESSURE.

- Depress air service valve.

LESSON REVIEW

This concludes Lesson I Main Hydraulic System Depressurization. This lesson review exercise provides you with a method of assessing your proficiency.

1. What should be checked prior to spoiler or air brake operation?
 - a. ensure steering is centered
 - b. ensure spoiler area is clear
 - c. ensure accumulators are charged
 - d. ensure spoiler control switch is set to ground position
2. What equipment must be worn while relieving reservoir pressure?
 - a. ear plugs
 - b. rubber gloves
 - c. eye protection
 - d. leather gloves
3. What two air pressure relief systems are interconnected?
 - a. body and inboard
 - b. body and outboard
 - c. left inboard and right outboard
 - d. left outboard and right inboard

REFERENCES

T.O. 1B-52H-2-2JG-1

External Electrical Power Application

T.O. 1B-52H-2-2GA-1

Fabricated Hose Assembly

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LESSON II

MAIN HYDRAULIC SYSTEM RESERVOIR SERVICE

OVERVIEW

This lesson covers the actions necessary to perform the Main Hydraulic System Reservoir task on the B-52H aircraft.

OBJECTIVE

Given tech data, perform the Main Hydraulic System Reservoir Service task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

NOTE



Using a cart is the preferred method of servicing a reservoir. Servicing through the filler neck is the alternate method but should only be performed when external missiles and pylons are uploaded, in case of an emergency or if servicing cart is not available on base. If the alternate method is used personnel must ensure care is taken to prevent contaminants from entering the system during servicing.

1. ENSURE ACCUMULATORS ARE SERVICED TO SPECIFIED AIR PRELOAD.

- previously accomplished in the pretask preparation
- This is a good time to position the filler cart under the reservoir to be serviced. Ensure you try to fully extend the hose when servicing.

2. GAIN ACCESS TO OUTBOARD SYSTEM RETURN LINE QUICK-DISCONNECT.

- only if outboard system is being serviced
- Position stand.
 - properly locked
 - safety pins installed
 - do not stand on rails
 - do not stand on steps when raising or lowering
- panel 542L or 543R, located just inboard of the outboard reservoir access panel
- Disengage 15 quick-release fasteners.

3. CUT SAFETY WIRE ON THE QUICK-DISCONNECT AND SEPARATE COUPLING IN THE RESERVOIR RETURN LINE.

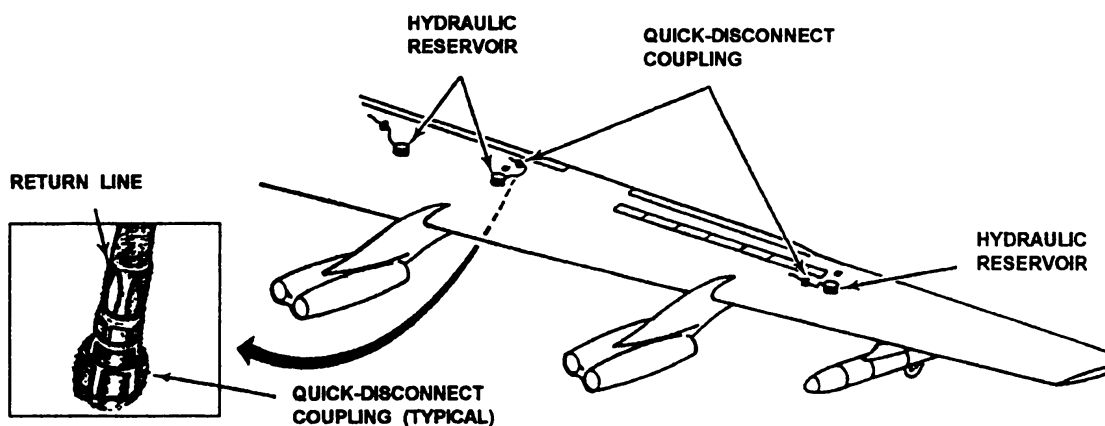


Fig. 3-5

CAUTION



When connecting or disconnecting the reservoir return hose to or from the filler cart during servicing of the reservoir support the reservoir return hose and do not allow it to twist or bend excessively. If necessary, to gain more slack in the hose, disconnect the clamp in the center of the hose assembly from the aircraft structure.

NOTE



The support chain is provided on the end of the servicing cart hose to preclude binding or kinking of the aircraft return (servicing) hoses. The support chain will be looped through the wing structure and connected to the QD with the retaining pin. Some type of chafe guard should be used between the chain and structure.

4. CONNECT THE HYDRAULIC SERVICING CART TO THE RESERVOIR QUICK-DISCONNECT COUPLING.

- Ensure the quick disconnect (QD) is clean.
- Ensure hose is stretched to its entire length.
- Use caution not to crimp the hose.

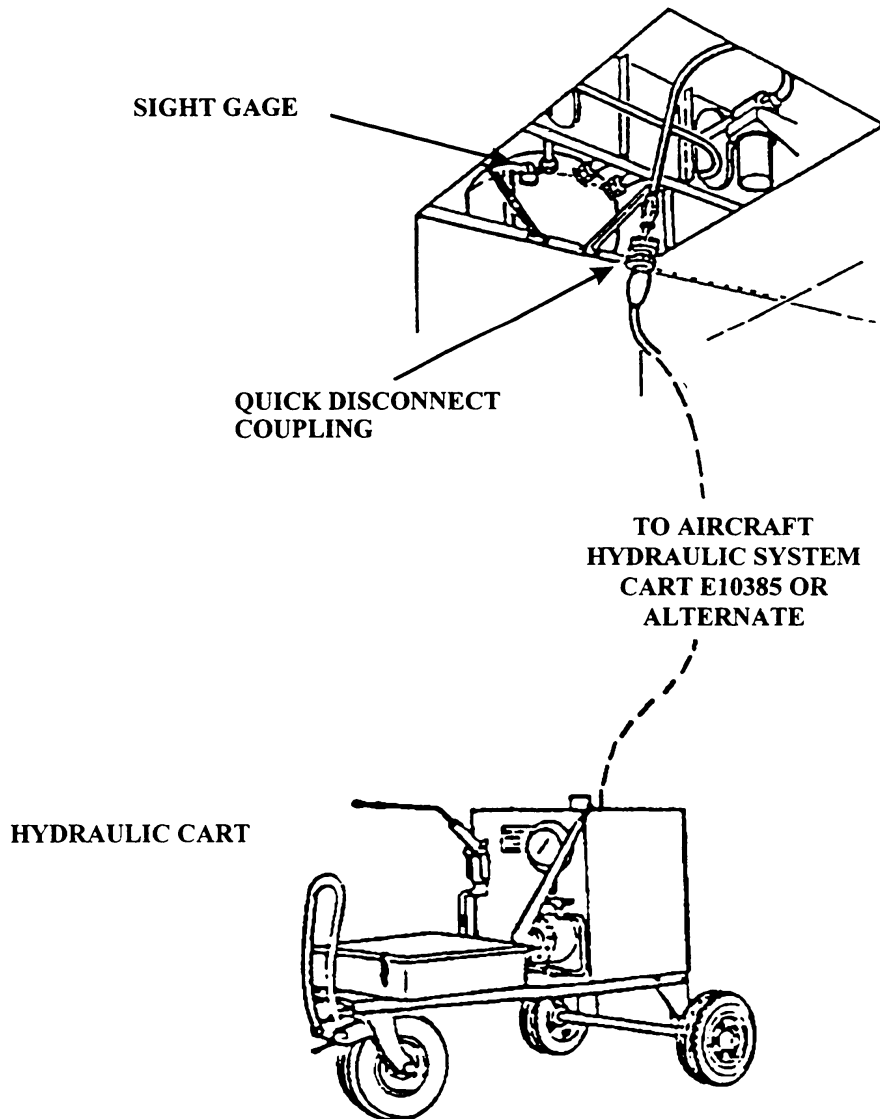


Fig. 3-6

NOTE



A lower level index on sight gage marked REFILL indicates need for replenishing.

5. **FILL THE RESERVOIR TO THE FULL MARK (LINE) ON THE RESERVOIR SIGHT GAGE.**

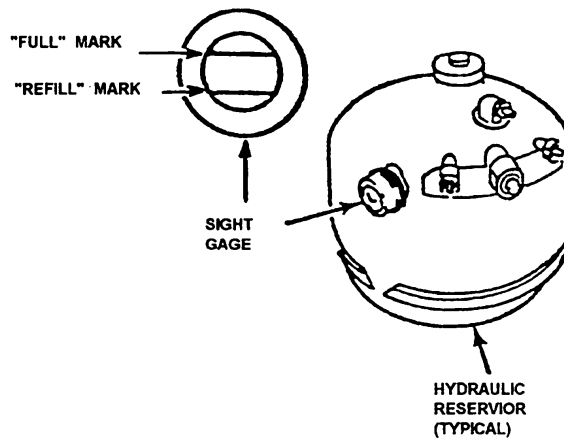


Fig. 3-7

- If the fluid level in the sight gage is less than 1/2 inch above the FULL mark, it is considered to be within limits. If the fluid level is 1/2 inch or more above the FULL mark, the reservoir must be drained down to 1/4 inch above the FULL mark. However, when servicing the reservoir, always service to the FULL mark.

6. DISCONNECT HYDRAULIC SYSTEM FILLER CART FROM RESERVOIR AT THE QUICK-DISCONNECT COUPLING.

CAUTION



Union nut should only be tightened by hand. Never use a mechanical device (such as channel locks) on a union nut. Excessive tightening may damage the union nut and cause a malfunction of the lock spring release mechanism.

7. RESTORE THE RETURN LINE QUICK-DISCONNECT TO NORMAL.

- Twist the coupling halves together by turning union nut clockwise onto the coupling.
- Ensure locking tabs fully engage and a distinct click is heard.
 - until nut can no longer be turned by hand
- Safety wire the quick-disconnect (.032 safety wire).

NOTE



If reservoirs are serviced to the FULL index mark during the cool temperature of the morning and rechecked in the afternoon when the temperature has risen, the sight gage will read over-full due to thermal expansion.

8. IF RESERVOIR IS FILLED TO 1/2 INCH OR MORE ABOVE THE FULL MARK, PARTIALLY DRAIN THE RESERVOIR TO 1/4 INCH ABOVE THE FULL MARK.

- Now is a good time to reinstall any access panels that were removed (if any), inventory the tools and perform a clean up of the area.

LESSON REVIEW

This concludes Lesson II Main Hydraulic System Reservoir Service. This lesson review exercise provides you with a method of assessing your proficiency.

1. Which is the preferred method for servicing the main hydraulic system reservoir?
 - a. by filler neck
 - b. a hydraulic service cart
 - c. waxed dixie cup and funnel
 - d. marked measuring cup and a funnel
2. What caution is given, when connecting or disconnecting the reservoir return hose to or from the service cart?
 - a. support hose with a support chain
 - b. support hose to prevent end fittings from separating
 - c. support hose and do not allow it to bend or twist at any time
 - d. support hose and do not allow it to twist or bend excessively
3. If the reservoir is serviced over 1/2 inch above the FULL mark, what is required to correct this condition?
 - a. drain down to FULL mark
 - b. drain down to 1/8 inch above FULL mark
 - c. drain down to 1/4 inch above FULL mark
 - d. drain down to 1/2 inch above FULL mark
4. How should the reservoir quick disconnect be tightened?
 - a. by hand only
 - b. to 30 inch pounds
 - c. to 50 inch pounds
 - d. with open end wrench until tight

REFERENCES

T.O. 1B-52H-2-2JG-3

Accumulator Service

[illegible]

LESSON III

MAIN HYDRAULIC SYSTEM RESERVOIR (PARTIAL) DRAINING

OVERVIEW

This lesson covers the actions necessary to partially drain a main hydraulic system reservoir on the B-52H aircraft.

OBJECTIVE

Given tech data, perform the Main Hydraulic System Reservoir (partial) Draining task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

NOTE



Prior to partially draining hydraulic reservoirs, check that following conditions prevail:

Outboard Wing System - tip protection gear extended, spoilers down, hydraulic system pressure zero, and accumulator serviced to proper air preload value.

Inboard Wing System - spoilers down and hydraulic system pressure zero.

Body System - main landing gear extended, bomb doors open, brakes released, IFR doors closed, hydraulic system pressure zero, and accumulators serviced to proper air preload value.

1. DEPRESSURIZE APPLICABLE MAIN HYDRAULIC RESERVOIR.

- previously accomplished in pretask preparation

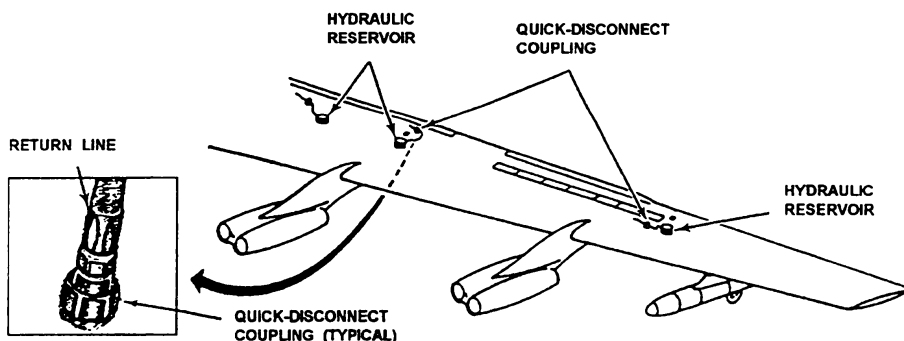


Fig. 3-8

2. ENSURE APPLICABLE ACCUMULATORS ARE SERVICED TO PROPER AIR PRELOAD.

- previously accomplished in pretask preparation

CAUTION



When connecting or disconnecting the reservoir hose to or from the drain hose and during draining of the reservoirs, support the reservoir return hose and do not allow it to twist or bend excessively. If necessary, to gain more slack in the hose, disconnect the clamp in the center of the hose assembly from the aircraft structure.

NOTE



A support chain is provided on the end of the locally manufactured drain hose to preclude bending or kinking of the aircraft return (servicing) hoses. The support chain will be looped through the wing structure and connected to the QD with the retaining pin. Some type of chafe guard should be used between the chain and structure.

3. GAIN ACCESS TO APPLICABLE HYDRAULIC SYSTEM RETURN LINE QUICK-DISCONNECT.

- Position stand.
 - properly locked
 - safety pins installed
 - do not stand on rails
 - do not stand on steps when raising or lowering
- Cut safety wire and disconnect quick-disconnect coupling

4. CONNECT DRAIN HOSE ASSEMBLY TO THE RESERVOIR RETURN LINE QUICK-DISCONNECT COUPLING.

- direct hose and fluid into a suitable container

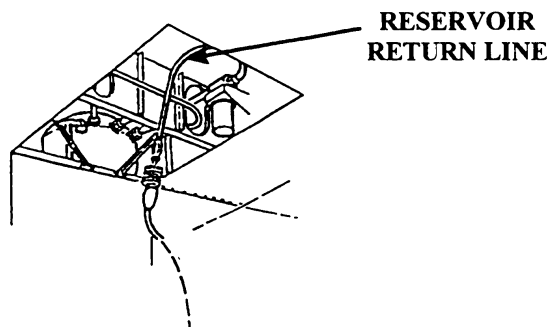


Fig 3-9

5. GAIN ACCESS TO APPLICABLE AIR SERVICE VALVE AND REMOVE CAP.

- body and inboard system
 - next to the inboard reservoir
- outboard system
 - inside panel 542L or 543R

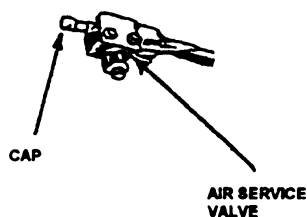


Fig. 3-10

WARNING



Excessive pressure could rupture reservoir sight gage and cause injury to personnel. Use only a hand operated air source and do not attempt to pressurize reservoir until drain hose assembly is connected to quick disconnect coupling.

6. REMOVE "B" NUT ON BOTTOM OF VALVE, AND DRAIN MOISTURE AND REINSTALL "B" NUT.

- Connect hand operated air source to the air servicing valve.
- operate hand pump and pressurize 1 to 2 psi.
- fluid flows into container
- Repressurize as required to maintain fluid flow.

7. DISCONNECT AIR SOURCE PRIOR TO REACHING THE DESIRED FLUID LEVEL.

- Reinstall air servicing valve cap.

NOTE



Fluid will continue to flow from drain hose after air source is disconnected but will decrease as air pressure in reservoir diminishes.

8. DISCONNECT DRAIN HOSE FROM THE RETURN LINE QUICK DISCONNECT.

- when fluid flow stops
- ensure fluid is at desired level

CAUTION



Union nuts should be tightened only by hand. Never use a mechanical device (such as channel locks) on a union nut. Excessive tightening could damage the union nut and cause a malfunction of the lock spring release mechanism.

9. RESTORE THE RETURN LINE QUICK-DISCONNECT TO NORMAL.

- Twist the coupling halves together by turning union nut clockwise onto the coupling.
 - Ensure locking tabs fully engage and a distinct click is heard.
 - until nut can no longer be turned by hand
 - Safety wire the quick-disconnect (.032 safety wire).
- All drained hydraulic fluid must be disposed of into an approved waste container. Ensure you reinstall any removed panels, clean the area and inventory the tools or equipment used during the task.

LESSON REVIEW

This concludes Lesson II Main Hydraulic System (Partial) Draining. This lesson review exercise provides you with a method of assessing your proficiency.

1. Prior to partially draining hydraulic reservoirs, check the inboard wing system for which of the following conditions?
 - a. tip protection gear is extended
 - b. main landing gear is manually pinned
 - c. spoilers down and hydraulic system pressure is 0 PSI
 - d. wing flaps down and hydraulic system pressure is 0 PSI
2. What should be installed on the drain hose between the support chain and the aircraft structure?
 - a. retaining pin
 - b. phenolic block
 - c. 1/4 inch padding
 - d. some type of chafe guard
3. What air source is used to service the reservoir?
 - a. MC-7
 - b. MC-1A
 - c. nitrogen cart
 - d. hand operated

REFERENCES

T O. 1B-52H-2-2JG3

Accumulator service

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SECTION IV

INTRODUCTION

Section IV covers the actions necessary to service aircraft tires on a B-52H aircraft. The first part covers the Pretask Preparation. Lesson I covers the Main Landing Gear Tire Service task and Lesson II deals with the Tip Gear Tire Service task.

PRETASK PREPARATION

APPLICABLE TO

1. B-52H aircraft
2. B-52H maintenance personnel

METHOD OF ACCOMPLISHMENT

1. Explanation
2. Discussion
3. Demonstration
4. Performance

OVERVIEW

This section covers the actions necessary to obtain all of the equipment necessary to perform the Main Landing/Tip Gear Tire Service tasks on the B-52H aircraft.

PREREQUISITES

The student should be familiar with:

1. Aircraft Safe for Maintenance
2. Applicable technical order

1. TECH DATA.

- T.O. 1B-52H-2-2JG-3 (Main Landing Gear Tires)
- T.O. 1B-52H-2-2JG-4 (Tip Gear Tires)
- Aircraft weight and balance book

2. TOOLS.

- mini kit (inventory)
- tire valve deflator (if not in mini kit)
 - if over inflation occurs
- low pressure air chuck (if not in mini kit)

3. EQUIPMENT.

- tire gages
 - high pressure air testing gage (main landing gear tires)
 - pneumatic tire inflator gage (tip gear tires)
 - inspect for
 - inspection date
 - glass condition
 - overall condition
- inflator kits
 - main landing gear tires
 - tip gear tires
- eye protection
 - safety glasses, face shield or goggles
- regulated dry air/nitrogen pressure source
 - MC-1A (high pack)
 - Nitrogen cart

4. CHECK AFTO FORM 781s.

- safe to perform the task
 - no red X conditions that would prevent the safe completion of the task
 - no danger tags installed that affect the safe accomplishment of the task
 - review open discrepancies which could adversely affect the task

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LESSON I

MAIN LANDING GEAR TIRE INFLATION

OVERVIEW

This lesson covers the actions necessary to perform the a Main Landing Gear Tire Inflation task on a B-52H aircraft.

OBJECTIVE

Given tech data, perform the Main Landing Gear Tire Inflation task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

WARNING



Eye protection shall be worn during tire inflation. Aircraft should not be taxied or towed when tires are underinflated. Using activities are therefore cautioned to check and correct tire inflation pressure at preflight inspection.

NOTE



If aircraft requires towing or taxiing during the day, it will not be necessary to check tire pressure prior to each move. However, a visual tire check will be required. If it is suspected that a tire is underinflated, pressure check as specified above shall be made.

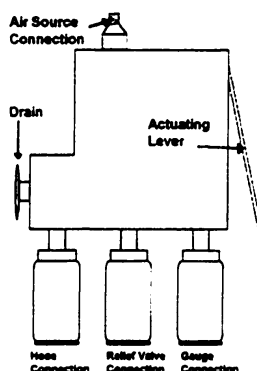
CAUTION



Whenever booster pumps or air pressure bottles are used as a source of pressure for tire inflation, and booster pump output or pressure stored in the bottle is greater than 500 psi, the regulator shall be used enabling maintenance personnel to have controlled line pressure of not more than 500 psi. Personnel are cautioned against use of a high pressure air source unless the above recommendations are used. In order to prevent accidents during inflation of tires, periodic checks of air pressure within the tire during inflation will be made to avoid over inflation.

1. ATTACH SOURCE TO TIRE INFLATOR KIT.

- dry air or nitrogen



**TIRE INFLATOR
KIT**

Fig. 4-1

- The tire pressure requirements should be determined at this time. The gross weight of the aircraft determines the aircraft tire pressure requirements. Ensure you understands the method of obtaining the aircraft gross weight, and don't forget to add the fuel, water and any weapons, bomb racks, pylons (etc.) on board the aircraft (if applicable) to the last entry of the aircraft DD Form 365-3 (Weight and Balance book).

2. ADJUST PRESSURE SOURCE REGULATOR TO 500 PSI MAXIMUM.

3. REMOVE VALVE STEM CAP.

4. ATTACH INFLATOR KIT TO THE TIRE VALVE.

- The tires should be serviced to as close to the specific pressure, as possible. If the temperature fluctuates, the tire pressure should still be within the limits (± 5 psi) allowed when checking the tire pressure.

WARNING

When servicing aircraft tires, stay either forward or aft of the tire being inflated. Make sure inflator kit hose is fully extended. Overservice of the tires may cause failure of the tire or wheel and result in serious or fatal injury to personnel.

AIRCRAFT GROSS WEIGHT	INFLATION PRESSURE FWD TIRES	INFLATION PRESSURE AFT TIRES
460,000 pounds and above	265 (±5) PSI	305 (±5) PSI
Below 460,000 pounds	245 (±5) PSI	280 (±5) PSI

5. INFLATE TIRE.

- to desired pressure
- If overserviced, use deflator tool to deflate until desired pressure is reached

6. REMOVE INFLATOR KIT AND AIR SOURCE FROM THE TIRE VALVE.**7. INSTALL VALVE CAP**

- If the tire being serviced has lost 5% of the pressure within the last 24 hours and there has not been an appreciable ambient temperature change, a leakage and diffusion pressure check should be accomplished. A 781 entry should be entered with:
 - the date and time serviced and the pressure serviced to
 - ambient temperature at time of service
 - 24 hour leakage check due
- This will help to determine if there has been an excessive loss of pressure. Excessive tire pressure loss may warrant immediate wheel and tire assembly replacement, without completion of the documented pressure check.
- Ensure you inventories the equipment and tools, and cleans the area of any FOD.

LESSON REVIEW

This concludes Lesson I Main Landing Gear Tire Inflation. This lesson review exercise provides you with a method of assessing your proficiency.

1. When servicing tires with an air source over 500PSI, what will be installed to control line pressure?
 - a. regulator
 - b. service cart
 - c. volume filter
 - d. flow restrictor
2. What determines aircraft tire pressure?
 - a. mission type
 - b. runway conditions
 - c. aircraft gross weight
 - d. type of weapons load

REFERENCES

T.O. 4T-1-3

Inspection, Maintenance, Instructions, Storage, and Disposition
of Aircraft Tires and Inner Tubes

[illegible]

LESSON II

TIP GEAR TIRE INFLATION

OVERVIEW

This lesson covers the actions necessary to perform the Tip Gear Tire Inflation task on a B-52H aircraft.

PREREQUISITES

The student should be familiar with:

1. Aircraft Safe for Maintenance
2. Applicable technical order

OBJECTIVE

Given tech data, perform the Tip Gear Tire Inflation task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

WARNING



Eye protection shall be worn during tire inflation.

1. ATTACH PRESSURE SOURCE UNIT TO TIRE INFLATOR KIT.

- dry air or nitrogen

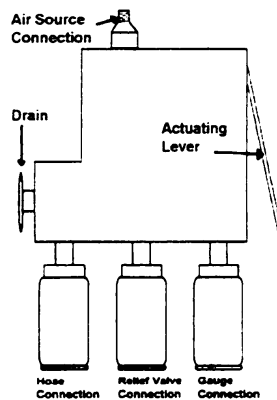


Fig. 4-2

2. ADJUST PRESSURE SOURCE REGULATOR.

- 150 psi. maximum

3. REMOVE VALVE STEM CAP.

4. ATTACH INFLATOR KIT TO THE TIRE VALVE.

- The tires should be serviced to as close to the specific pressure, as possible. If the temperature fluctuates, the tire pressure should still be within the limits (± 5 psi) allowed when checking the tire pressure.

WARNING

When servicing aircraft tires, to stay either forward or aft of the tire being inflated. Make sure inflator kit hose is fully extended. Overservice of the tires may cause failure of the tire or wheel and may result in serious or fatal injury to personnel.

5. INFLATE TIRE.

- to desired pressure

- 75 (\pm 5 psi)

- ☐ If over serviced, use deflator tool to deflate pressure to desired pressure

6. REMOVE INFLATOR KIT AND AIR SOURCE FROM THE TIRE VALVE.**7. INSTALL VALVE CAP.****NOTE**

If the tire being serviced has lost 5% of the pressure within the last 24 hours and there has not been an appreciable ambient temperature change, a leakage and diffusion pressure check should be accomplished. A 781 entry should be entered with:

- the date and time serviced, the pressure serviced to
- ambient temperature at time of service
- 24 hour leakage check due

This will help to determine if there has been an excessive loss of pressure. Excessive tire pressure loss may warrant immediate wheel and tire assembly, without completion of the documented pressure check.

- ☐ Ensure you inventories the equipment and tools, and cleans the area of any FOD.

LESSON REVIEW

This concludes Lesson III Tip Gear Tire Inflation. This lesson review exercise provides you with a method of assessing your proficiency.

1. How should you position yourself when servicing aircraft tires?
 - a. forward or aft of the tire
 - b. at least the full length of the servicing hose away
 - c. 10 feet minimum from the tire
 - d. 25 feet minimum from the tire.

REFERENCES

T.O. 4T-1-3	Inspection, Maintenance, Instructions, Storage, and Disposition of Aircraft Tires and Inner Tubes
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SECTION V

INTRODUCTION

Section V covers the actions necessary to perform pneudraulic servicing on the B-52H aircraft. Prior to beginning the section review T.O. 32B14-3-1-101 on Torque Wrenches. The first part of this section covers pretask preparation. Lesson I covers the Accumulator Servicing task while Lesson II and III covers the Main Landing Gear Shock Strut Deflating and Inflating tasks. Lesson IV and V deals with the Tip Gear Deflating and Inflating tasks.

PRETASK PREPARATION

APPLICABLE TO

1. B-52H aircraft
2. B-52H maintenance personnel

METHOD OF ACCOMPLISHMENT

1. Explanation
2. Discussion
3. Demonstration
4. Performance

OVERVIEW

This part of the section covers the actions necessary to obtain all of the equipment necessary to perform the Accumulator Service, Main Landing Gear Shock Strut Deflating and Inflating, and the Tip Gear Deflating and Inflating tasks.

PREREQUISITES

The student should be familiar with:

1. Aircraft Safe for Maintenance
2. Applicable technical order

1. TECH DATA.

- 1B-52H-2-2JG-1 (Power Application)
- 1B-52H-2-2JG-2 (Accumulator Service)

2. TOOLS.

- mini kit (inventory)
- torque wrench
 - 0 to 250 inch pounds
- Now would be a good time to review T.O. 32B14-3-1-101 (torque wrenches).
Review the inspection and operating techniques, and ensure you understand the usable range of a torque wrench.
- 3/4 inch crows foot adapter or deep socket
- high pressure air chuck (if not in mini kit)
 - insure seal is not missing/ damaged
- headsets (2 each)
- ground cord

3. EQUIPMENT.

- regulated air pressure source
 - 1000 psi
 - MC-1A (high pack)
 - Nitrogen cart
- power unit
 - 400 (\pm 5) cycles
 - 205 (\pm 5) volts
- ladder
- B-4 stand (if required)

4. AIRCRAFT ITEMS.

- Check AFTO Form 781s.
 - safe to perform the task
 - no red X conditions that would prevent the safe completion of the task
 - no danger tags installed that affect the safe accomplishment of the task
 - review open discrepancies which could adversely affect the task

LESSON I

ACCUMULATOR SERVICING

OVERVIEW

This lesson covers the actions necessary to perform the Accumulator Service task on a B-52H aircraft.

OBJECTIVE

Given tech data, perform the Accumulator Service task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

- Before you climb into the cockpit, ejection seat safety must be reviewed. Safety items include initiators, parachutes, seat pins, seat motor operation and tools in uniform pockets.

1. DEPRESSURIZE THE HYDRAULIC PRESSURE SUPPLY SYSTEM.

- previously completed in section III

2. REMOVE VALVE CAP FROM THE FILLER VALVE.

3. CONNECT SOURCE OF DRY COMPRESSED AIR TO THE HYDRAULIC ACCUMULATOR FILLER VALVE.

CAUTION



Excessive loosening of swivel nut will allow stem assembly to drop into accumulator.

3. LOOSEN SWIVEL NUT ON MS28889 FILLER VALVE.

- maximum of 2 1/4 turns

NOTE



Change hydraulic accumulators to specific pressures at 21 degrees C (70 degrees F) with clean dry air. See following list for pressures at other temperatures

STABILIZED SERVICING TEMPERATURE	SERVICING PRESSURE
60C (+140F)	1140 (±50)
49C (+140F)	1100 (±50)
37C (+140F)	1060 (±50)
26C (+140F)	1020 (±50)
21C (+140F)	1000 (±50)
15C (+140F)	980 (±50)
5C (+140F)	940 (±50)
-6C (+140F)	900 (±50)
-18C (+140F)	860 (±50)
-29C (+140F)	820 (±50)
-40C (+140F)	780 (±50)
-51C (+140F)	740 (±50)

CAUTION



Precharging hydraulic accumulators at high rate with resulting surge pressures should be avoided to prevent damage to accumulator and/or components in system.

4. CHARGE HYDRAULIC ACCUMULATOR.

- Fill to specified pressure.
- use continuous slow rate of flow to prevent damage to internal seals

5. CHECK SYSTEM PRESSURE.

- after temperature has stabilized by reading accumulator gage

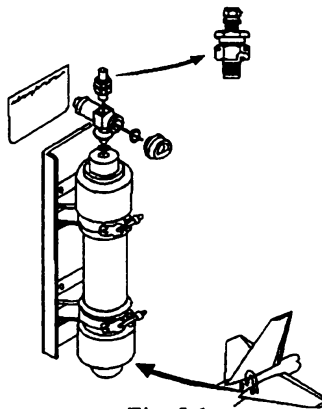


Fig. 5-1

6. TURN SWIVEL NUT CLOCKWISE.

- Torque 50 to 70 inch-pounds.

7. INSURE THAT PROPER PRELOAD IS OBTAINED.

- Deplete system pressure.
- Take final reading on respective accumulator gage.

8. DISCONNECT AIR SOURCE FROM ACCUMULATOR FILLER VALVE.

9. INSTALL VALVE CAP ON FILLER VALVE.

- Tighten finger tight.

LESSON REVIEW

This concludes Lesson I Accumulator Servicing. This lesson review exercise provides you with a method of assessing your proficiency.

1. How is accumulator pressure confirmed, when body system pressure is bled off?
 - a. when flight deck indicator stops moving
 - b. when flight deck indicator reaches 1000 PSI
 - c. when ground observer verifies accumulator pressure
 - d. when noise no longer heard while pumping the brakes
2. Which accumulator is depressurized when the MASTER REFUEL switch is placed in the OFF position?
 - a. IFR
 - b. main body
 - c. right inboard
 - d. emergency transfer
3. Excessive loosening of the accumulator swivel nut, will result in what condition?
 - a. excessive foaming at the exit port
 - b. allow stem assembly to drop into accumulator
 - c. little or no effect on the accumulator
 - d. allow stem assembly to become a projectile

REFERENCES

T.O. 32B14-3-1-101

AFOSH 91-66

Torque Wrenches

General Industrial Operations

NOTES

5-8

LESSON II

MAIN LANDING GEAR SHOCK STRUT DEFLATION

OVERVIEW

This lesson covers the actions necessary to perform the MLG Shock Strut Deflation task on the B-52H aircraft.

OBJECTIVE

Given tech data, perform the MLG Shock Strut Deflation task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

- ❑ When completely deflating a strut, the opposite strut must be completely deflated at the same time. If not, the struts could bind, causing hydraulic fluid leakage or damage to the system/components.
- ❑ Before you climb into the cockpit, ejection seat safety must be reviewed. Safety items include initiators, parachutes, seat pins, seat motor operation and tools in uniform pockets.

1. POSITION PARKING BRAKE LEVER TO OFF.

- Depress brake pedals and release.
- lever moves to OFF

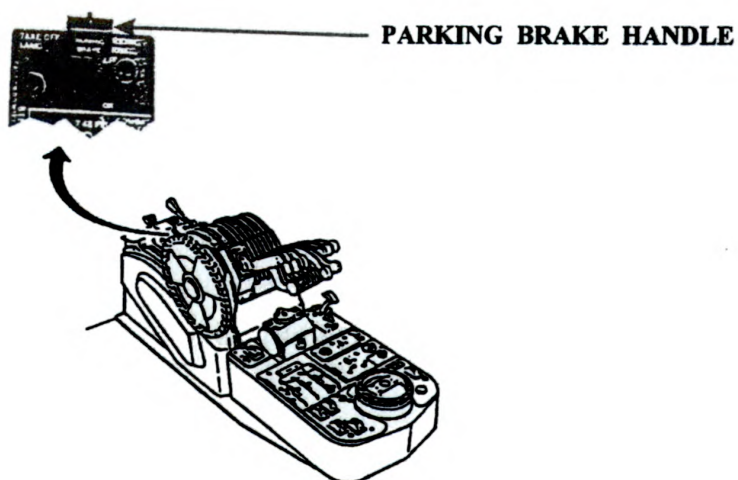


Fig. 5-2

2. POSITION CHOCKS SLIGHTLY AWAY FROM THE TIRES.

3. CLOSE THE FORWARD ENTRANCE HATCH.



Fig. 5-3

CAUTION



Ensure the area under the aircraft is clear of obstructions prior to deflating the shock struts.

4. WIPE EXPOSED PISTON OF THE SHOCK STRUT.

- Clean with a thin film of hydraulic fluid (MIL-L-5606 or aerosol can MIL-L-6083C).
 - to prevent binding of the struts when deflating.
- This is a good time to review the decimal to inch conversion chart in T.O. 1B-52H-2-10MS-1.

5. REMOVE FILLER VALVE CAP FROM FILLER VALVE.

- located at top of main landing gear strut

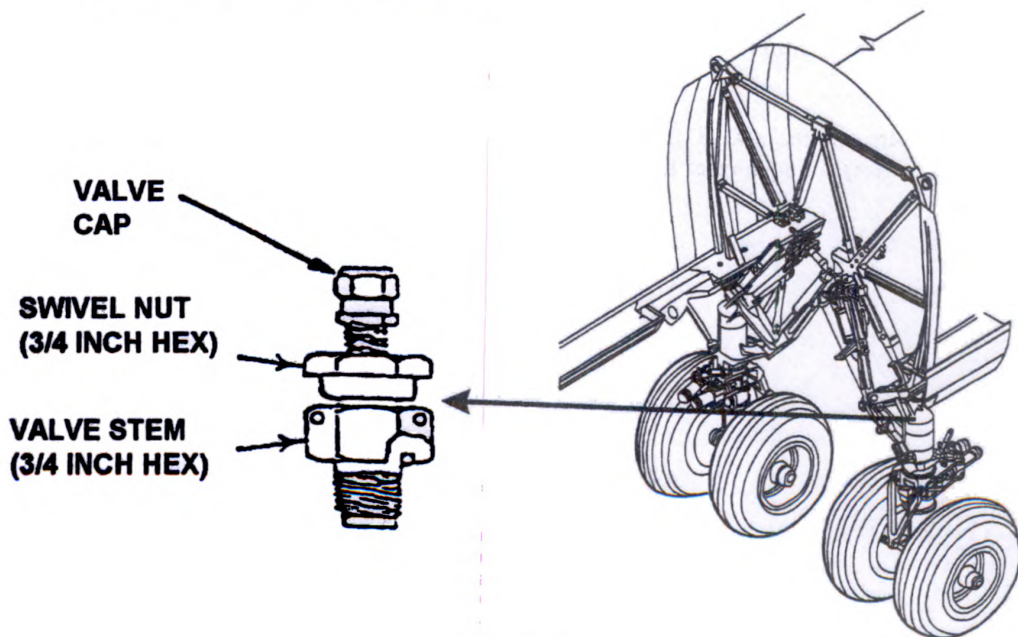


Fig. 5-4

6. USE 3/4 BACKING WRENCH ON VALVE STEM WHILE LOOSENING SWIVEL NUT ON FILLER VALVE.

- one 3/4 wrench on swivel nut and one 3/4 wrench on filler valve
- avoid loosening filler valve when loosening swivel nut
- Do not to deflate the shock strut for leveling purposes to less than 13.375 (13 and 3/8 inch) inches minimum (between torsion link pin centers). This prevents bottoming the upper bearing retainer nut or inner cylinder against the outer cylinder. Do not loosen the filler valve while the shock strut still has pressure in it.

7. LOOSEN HEX SWIVEL NUT ON THE FILLER VALVE.

- counterclockwise approximately 3/4 turn
- govern rate of discharge to a slow steady flow
- until all air is depleted from strut

8. POSITION CHOCKS.

- Install chocks firmly against MLG tires.
- Ensure you make a 781 form entry on the struts being deflated. You should also inventory all equipment and tools, and clean the area.

LESSON REVIEW

This concludes Lesson II MLG Shock Strut Deflation. This lesson review exercise provides you with a method of assessing your proficiency.

1. If a strut is to be completely deflated, what must be accomplished to the opposite strut at the same time?
 - a. must be completely deflated
 - b. must be deflated half its original distance
 - c. must be inflated two inches to relieve stress
 - d. chrome cylinder should be wiped with hydraulic fluid
2. When leveling aircraft using the aircraft struts, the minimum distance is measured between which points?
 - a. exposed chrome of the strut
 - b. between torsion link pin heads
 - c. between torsion link pin holes
 - d. between torsion link pin centers

REFERENCES

T.O. 1B-52H-2-10MS-1

Decimal to Inch Conversion Chart

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LESSON III

MAIN LANDING GEAR SHOCK STRUT INFLATION

OVERVIEW

This lesson covers the actions necessary to perform the MLG Shock Strut Inflation task on a B-52H aircraft.

OBJECTIVE

Given tech data, perform the MLG Shock Strut Inflation task on the B-52H aircraft, with no more than two assists and NO safety errors.

WARNING



Do not use air pressure to extend main gear shock struts to raise aircraft except as stated under the following caution. Required large volume of air under pressure creates an unstable condition and could cause damage to shock struts or injury to personnel. Do not use this procedure while aircraft is on jacks.

CAUTION



Do not inflate shock strut for leveling purposes to more than 21.375 inches maximum between torsion link pin centers to prevent damage to centering cams and keyways. Do not steer gear or add crosswind trim with shock strut extended under pressure to prevent damage to centering cams and keyways. Do not exceed shock strut pressure of 2750 psi when inflating shock strut to maintain aircraft level.

- Before you climb into the cockpit, ejection seat safety must be reviewed. Safety items include initiators, parachutes, seat pins, seat motor operation and tools in uniform pockets.

1. POSITION PARKING BRAKE LEVER TO OFF.

- Depress brake pedals and release.

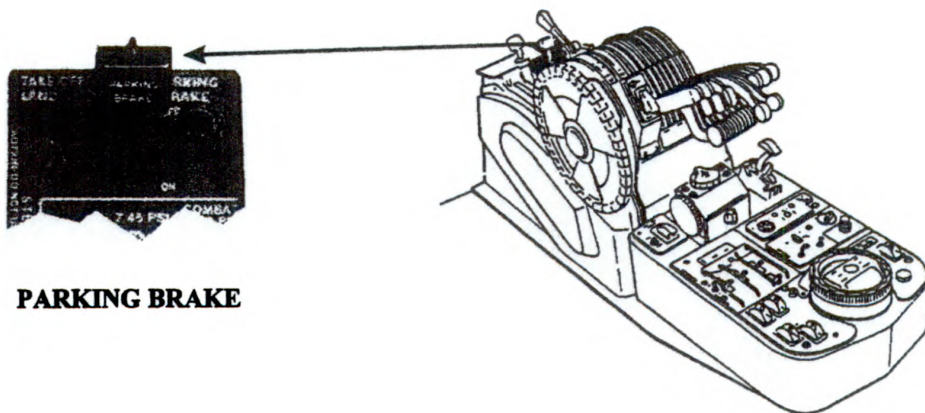


Fig. 5-5

2. POSITION CHOCKS SLIGHTLY AWAY FROM THE TIRES.

- chocks not touching tires during strut inflation procedure

NOTE



When inflating a completely flat strut, both struts must be inflated at same time.

- If struts are not inflated at the same time they could bind, causing hydraulic fluid leakage or damage to the system/components. This will also be a good time to show your trainee the decimal to inch conversion chart in T.O. 1B-52H-2-10MS-1.

3. REMOVE FILLER VALVE CAP FROM FILLER VALVE.

- located at top of main landing gear strut

4. ATTACH AIR FILLER CHUCKS OF THE LOCALLY FABRICATED STRUT SERVICING MANIFOLD WITH HIGH PRESSURE AIR TESTING GAGE TO FILLER VALVE STEMS.

- air filler chucks
- in-line high pressure air testing guage

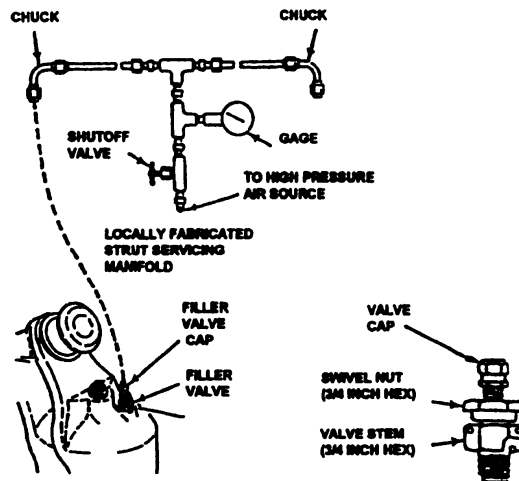


Fig. 5-6

- Ensure you perform the pre-operational inspection, and understands how to operate your particular unit IAW the unit's data placard. Also ensure the unit is not operated underneath the aircraft structure or wings. Now is a good time to start the air source and charge IAW the unit data placard and ensure you allow a warm up period.

5. USE A 3/4" BACKING WRENCH ON VALVE STEM WHILE LOOSENING SWIVEL NUT ON FILLER VALVE.

- one 3/4" wrench on swivel nut and one 3/4" wrench on filler valve
- to avoid loosening filler valve when loosening swivel nut

6. LOOSEN HEX SWIVEL NUT ON THE FILLER VALVE.

- counterclockwise 2 and 1/4 turns maximum

7. APPLY AIR PRESSURE THROUGH THE FILLER VALVE.

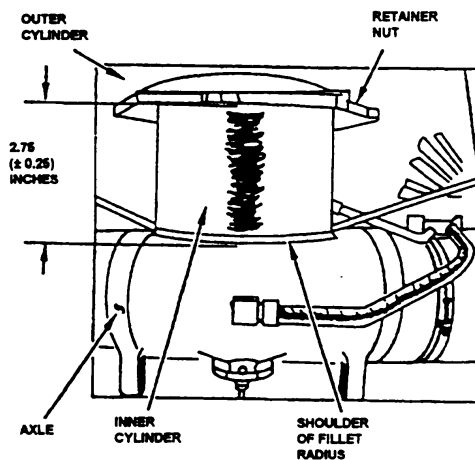
NOTE



Since normal static load distribution on main landing gear is 55 percent on aft gear and 45 percent on forward gear, shock strut air pressure will normally be higher in aft struts than in forward struts. Pressure should be approximately equal on both aft struts. Struts extension may be obtained by measuring between torsion link pin center or by measuring inner cylinder extension.

8. ADJUST AIR PRESSURE AND EXTEND THE INNER CYLINDER OF THE STRUT.

- do not exceed 2750 PSI air pressure
- Measure strut extension at takeoff weight, with aircraft on level ground.
 - distance between torsion link pin centers is 15.375 ($\pm .250$) inches
 - 15 and 3/8 (+/- 1/4) inches
 - distance between lower shoulder of fillet radius and lower side of retainer nut is 2.75 ($\pm .25$) inches
 - 2 3/4 ($\pm 1/4$) inches



MAIN LANDING GEAR STRUT EXTENSION

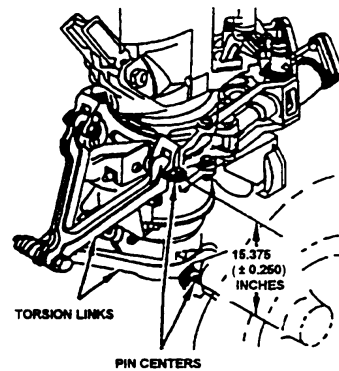


Fig. 5-7

- Ensure you nflate the struts slowly. Also ensure struts are being raised evenly, if servicing more than one strut. Have an assistant operate the high pack, while you measures the strut extension and opens and closes the filler valve.

9. CLOSE FILLER VALVE SWIVEL NUT AFTER SERVICING IS COMPLETED.

- tight enough to prevent leakage

NOTE



Failure to relieve manifold pressure before disconnecting the manifold line could result in personnel injury.

10. REMOVE LOCALLY FABRICATED STRUT SERVICING MANIFOLD WITH HIGH PRESSURE AIR TESTING GAGE.

- Disconnect two air filler chucks.

11. TORQUE HEX SWIVEL NUT TO OBTAIN SEAL.

- Close filler valve enough to prevent leakage.
- Torque to 50 to 70 inch pounds.

12. INSTALL FILLER VALVE CAP.

13. POSITION CHOCKS.

- Install firmly against MLG tires.

14. CHECK SHOCK STRUT FOR SEEPAGE IAW T.O. 1B-52H-2-10MS-1.

- shock strut allowable leakage rate
- Wipe strut dry.
- Make AFTO Form 781 entry.
 - 4 hour leak check due
 - allow strut to settle for four hours
- After 4 hours, if any hydraulic fluid seepage extends beyond the lower edge of machined circumference inner cylinder surface (shiny surface), the leak is considered beyond limits and discrepancy must be documented.

LESSON REVIEW

This concludes Lesson III MLG Shock Strut Inflation. This lesson review exercise provides you with a method of assessing your proficiency.

1. When leveling the aircraft using the aircraft struts, what is the maximum distance a strut can be extended?
 - a. 21.375
 - b. 21.737
 - c. 23.755
 - d. 27.135
2. What is the maximum pressure to the shock strut, when inflating shock strut to maintain aircraft level?
 - a. 3150 PSI
 - b. 2950 PSI
 - c. 2850 PSI
 - d. 2750 PSI

REFERENCES

T.O. 1B-52H-2-10MS-1

Decimal to Inch Conversion Chart/ Shock Strut
Allowable Leakage Rate

T.O. 32B14-3-1-101

Torque Wrenches

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LESSON IV

TIP GEAR SHOCK STRUT DEFLATION

OVERVIEW

This lesson covers the actions necessary to perform the Tip Gear Shock Strut Deflation task on the B-52H aircraft.

OBJECTIVE

Given tech data, perform the Tip Gear Shock Strut Deflation task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

CAUTION



Ensure area under aircraft is clear of obstructions prior to deflating the strut.

- Also that the exposed piston of the shock strut should be cleaned with a thin film of hydraulic fluid (MIL-H-5606 or aerosol can MIL-H-6083C) to prevent binding of the strut when deflating.

CAUTION



Ensure personnel performing maintenance on the wing at 10 feet or more above the ground, must wear an approved harness attached to the wing ropes. If not already installed, this would be the appropriate time.

1. REMOVE OLEO ACCESS PANEL FROM UPPER WING SURFACE.

- Panel 597L or 598R - remove 14 screws.
- Place in parts bag and secure to panel.

2. REMOVE FILLER VALVE CAP FROM FILLER VALVE.

- located at top of tip gear strut

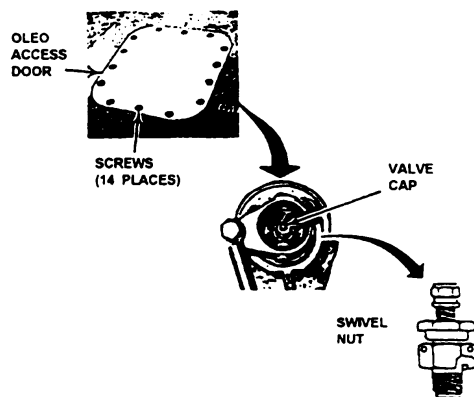


Fig. 5-8

3. LOOSEN HEX SWIVEL NUT ON THE FILLER VALVE.

- counterclockwise approximately 3/4 turn
- govern rate of discharge to a slow steady flow
- until all air is depleted from strut

- Ensure you make a 781 form entry on the strut being deflated, and that the panel has been removed. You should inventory all equipment and tools, and clean the area.

LESSON REVIEW

This concludes Lesson III Tip Gear Strut Deflation. This lesson review exercise provides you with a method of assessing your proficiency.

1. A safety harness must be worn when working above what height?
 - a. 10 feet
 - b. 15 feet
 - c. 20 feet
 - d. 25 feet

REFERENCES

AFOSH 91-66

Wing Ropes and Harnesses

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LESSON V

TIP GEAR SHOCK STRUT INFLATION

OVERVIEW

This lesson covers the actions necessary for the trainee to perform a tip gear shock strut inflation on the B-52H aircraft.

OBJECTIVE

Given tech data, perform a Tip Gear Shock Strut Inflation task on the B-52H aircraft, IAW applicable technical data with no more than two assists and NO safety errors.

- Notice the differences between a LOAD and a NO-LOAD condition of the tip gear shock strut. A Load condition occurs when the tip gear tire is on the ground and the shock strut is not fully extended. A No-Load condition is if the tip gear tire is not on the ground and is fully extended to 20 and 1/2 inches.
- Be familiar with the servicing procedures for both Load and No-Load conditions. If a strut that is under a No-Load condition is to be inflated, perform item B. If the strut is under a Load condition, go to item C.

A. TIP GEAR SHOCK STRUT INFLATION (NO LOAD CONDITION)

- Measure the strut extension prior to servicing, because the tip gears tend to bind and might not be fully extended.
- Position and secure the stand next to the area where you will gain access to the top of the wing. Personnel performing maintenance on the wing at ten feet or more above the ground, must wear an approved harness attached to the wing ropes. If not already installed, have your trainee install the wing rope at this time.

1. REMOVE OLEO ACCESS PANEL FROM UPPER WING SURFACE.

- panel 597L or 598R
- Remove 14 screws place in parts bag and secure to panel.

2. REMOVE FILLER VALVE CAP FROM FILLER VALVE.

- located at top of tip gear strut

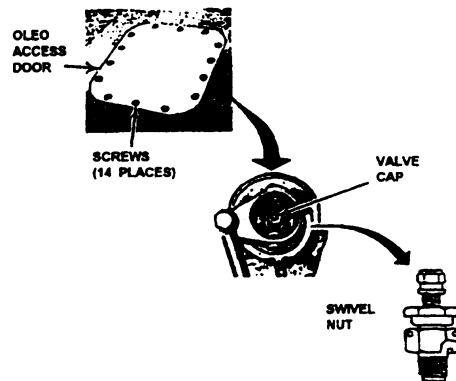


Fig. 5-9

3. ATTACH AIR FILLER CHUCK ON LOW PRESSURE SERVICING DEVICE TO THE FILLER VALVE STEM.

- low pressure servicing device (0 to 400 psi)

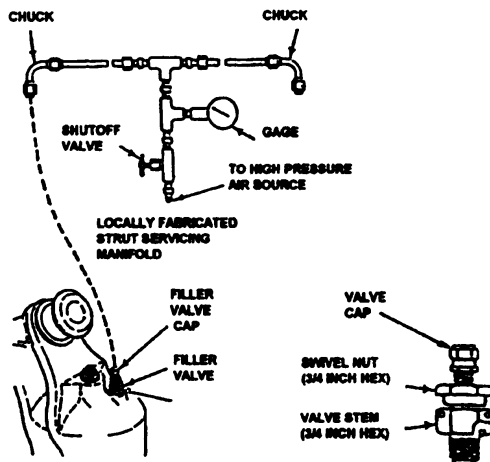


Fig. 5-10

4. LOOSEN HEX SWIVEL NUT ON THE FILLER VALVE.

- counterclockwise approximately 3/4 turn

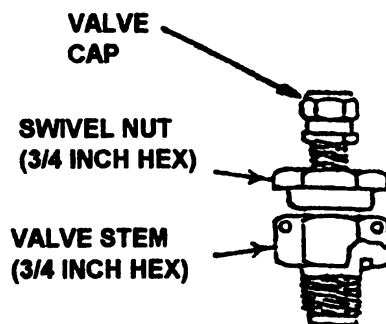


Fig. 5-11

CAUTION

Do not over pressurize the shock strut when the gear is under a No-Load condition. An air source capable of delivering pressure in excess of 500 psi shall not be used unless a regulator is used. To prevent accidents during servicing of the tip gear strut, periodic checks of air pressure within the strut during inflation will be made to avoid over servicing.

5. WITH STRUT FULLY EXTENDED, INFLATE STRUT.

- Inflate to 121 (\pm 5) psi if ambient temperature is 70 degrees F.
 - add 1 psi air pressure for every 5 degrees F temperature above 70 degrees F
 - subtract 1 psi air pressure for every 5 degrees F temperature below 70 degrees F

6. AFTER SERVICING, TORQUE HEX SWIVEL NUT.

- 50 to 70 inch pounds.

7. REMOVE AIR FILLER CHUCK.

- on low pressure servicing device
- Disconnect from valve stem.
- Remove unit from the area.

8. INSTALL VALVE CAP ON FILLER VALVE.

- Tighten finger tight.

9. INSTALL OLEO ACCESS PANEL.

- 597L or 598R
- Install 14 screws (NAS517-4-4).

- Inventory all equipment and tools, and clean the area. Continue to the Tip Gear Shock Strut Service - Load Condition.

B. TIP GEAR SHOCK STRUT SERVICE (LOAD CONDITION)

1. MEASURE DISTANCE OF SHOCK STRUT.

- from bottom of retainer nut to the inner cylinder shoulder

2. LOCATE MEASURED DISTANCE ON HORIZONTAL SCALE OF THE TIP GEAR SHOCK STRUT SERVICING (LOAD CONDITION) CHART.

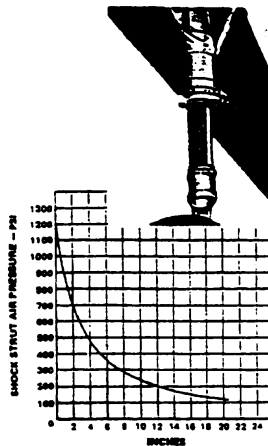


Fig. 5-12

3. DETERMINE THE PROPER SHOCK STRUT AIR PRESSURE.

- Read vertical scale where curve intersects the measured distance on the horizontal scale.
 - determine approximate shock strut air pressure

CAUTION



Ensure the area under the aircraft is clear of obstructions prior to deflating the shock strut.

4. REMOVE OLEO ACCESS PANEL FROM UPPER WING SURFACE.

- panel 597L or 598R
- Remove 14 screws.
- Place in parts bag and secure to panel.

5. REMOVE FILLER VALVE CAP FROM FILLER VALVE.

- located at top of tip gear strut

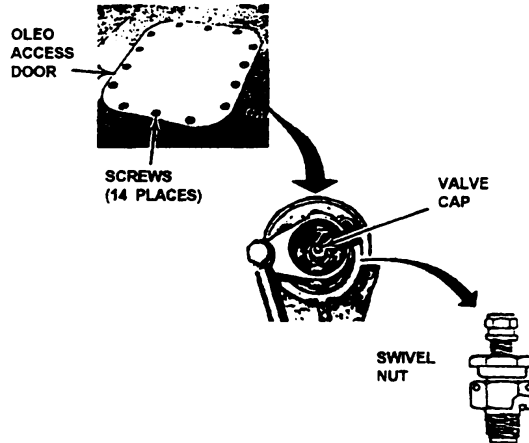


Fig. 5-13

6. ATTACH AIR FILLER CHUCK AND AIR PRESSURE GUAGE TO FILLER VALVE STEM.

- air pressure gage

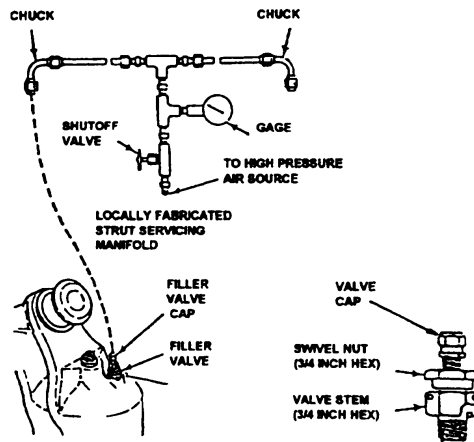


Fig. 5-14

7. LOOSEN HEX SWIVEL NUT ON THE FILLER VALVE.

- counterclockwise approximately 3/4 turn

- If the shock strut pressure is actually higher than required, to deflate the strut per step 8. If shock strut pressure is lower than required, omit step 8 and continue to step 9.

8. DECREASE AIR PRESSURE UNTIL DESIRED PRESSURE READING IS OBTAINED.

- Open relief valve on the air pressure guage.
- Relieve pressure until pressure reading is correct.

9. INFLATE SHOCK STRUT.

- Apply air through filler valve until required pressure is obtained

10. AFTER SERVICING, TORQUE HEX SWIVEL NUT.

- Torque 50 to 70 inch pounds.

11. REMOVE AIR FILLER CHUCK AND PRESSURE GUAGE.

- Disconnect from valve stem.
- Remove unit from the area.

12. INSTALL VALVE CAP ON FILLER VALVE.

- Tighten finger tight.

13. INSTALL OLEO ACCESS PANEL.

- 597L or 598R
- Install 14 screws (NAS517-4-4).

- Inventory all equipment and tools, and clean the area.

LESSON REVIEW

This concludes Lesson IV Tip Gear Strut Inflation. This lesson review exercise provides you with a method of assessing the your proficiency.

1. What type of maintenance stand(s) are required for servicing the tip gear strut?
 - a. B-1 or B-2
 - b. B-4 or B-1
 - c. B-5 or B-1
 - d. B-4 or B-5
2. Which describes a NO-LOAD condition for the tip gear?
 - a. tip gear is on the ground, but is extended at least 16 inches
 - b. tip gear is on the ground, but is extended at least 20 inches
 - c. tip gear is not on the ground and is fully extended to 20 1/2 inches
 - d. tip gear is not on the ground and is fully extended to 22 1/2 inches
3. To prevent accidents during servicing, what action must be accomplished while servicing a tip gear strut?
 - a. service strut slowly to seat the gland seal
 - b. service strut quickly to seat the gland seal
 - c. perform periodic checks of air pressure within the strut
 - d. ensure ambient temperature is below 120 degrees Fahrenheit

REFERENCES

T.O. 32B14-3-1-101

Torque Wrenches

AFOSH 91-66

Wing Ropes and Harnesses

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FOD, DOP, AND SAFETY REVIEW

The purpose of this part of the guide is to give you a highlighted review of FOD, DOP and Safety. Therefore, no lesson objective will be given. We simply want you to find a comfortable place, take your time, and review the following information.

FOD

Foreign Object Damage (FOD), as with everything in today's Air Force, has a regulation covering it, AFI 21-101 to be exact. Foreign Object (FO) is defined as "an object that is alien to an area or system." In our case, alien to an aircraft. Some examples of FOD are engine damage caused by ingestion of loose hardware, flight controls jammed by hardware or tools, and tires damaged by FOs on the ramp or taxiway.

The objective of the FOD Prevention Program is obviously to eliminate potential sources of FOD. To do so, you must know the causes of FOD, such as, poor housekeeping and poor work habits. Since this is one charity that's gotten its share, here are a few tips to cut your losses:

- 1. Perform all of your tasks according to tech data.**
- 2. Practice good housekeeping at all times.**
- 3. Ensure all tools, T.O.s, equipment and hardware are accounted for throughout and at the end of your task.**
- 4. Make sure the folks that work around and for you pick up after themselves as well.**
- 5. Refer to AFI 21-101 for additional information on:**
 - publicity programs
 - FOD investigation
 - FOD reporting
 - program responsibilities
 - ACC supplement 1

The following items are potential sources of FOD:

- 1. SAFETY WIRE, PROTECTIVE CAPS.**
- 2. TOOL BOX/MINI KIT.**
 - Inventory tools and equipment before, during, and after accomplishing a task.

3. PACKAGING CONTAINERS OR EMPTY CANS.

4. PERSONAL ITEMS.

- pens/pencils
- hat
- line badge

5. TECH DATA.

- all T.O.s accounted for

DOP

The Dropped Object Prevention (DOP) Program is covered in AFI 21-101. Dropped Objects are, "The loss of any aircraft part, component, store, surface, or other item not intentionally jettisoned during any sortie from engine start to engine shutdown."

The objective of the DOP program is to prevent inadvertent loss of objects from ACC aircraft. To meet this objective, ACC has ensured that you receive DOP training during AETC technical schools. If you didn't, your training records will indicate this and you'll receive local training to satisfy this ACC requirement. Also, you should have received a workcenter initial evaluation to include a briefing on the ACC DOP Program.

We could go on with the list, but we'd rather you take a look at ACCR 66-5 and its supplements. Additional information covering responsibilities, background, and procedures as well as some training references are given.

The following may help you with Dropped Object Prevention:

- 1. Check your training records for missed DOP training.**
- 2. Ensure radomes, panels and doors properly fit.**
- 3. Check for serviceability of all fasteners and condition of latches.**
- 4. Ensure panels are installed/adjusted IAW tech data.**
- 5. Document the forms when you remove, repair or install an access panel/door.**

SAFETY

Safety is an important aspect during aircraft maintenance. It must be done without injury or damage to the aircraft. Hazards are always involved when performing aircraft maintenance due to the nature of the work, the equipment and tools involved, and a variety of materials needed to repair the aircraft. Let's not forget that you've got to get the aircraft off on-time.

As far as time constraints go, they'll never change. However, we can do something about the other factors. In this part of the guide, we'll discuss the hazards involved you may encounter while performing maintenance.

The following are typical unsafe acts you need to avoid anytime:

1. **Running up and down stairs or steps.**
2. **Failing to use handrails.**
3. **Jumping from maintenance stands and aircraft.**
4. **Climbing on maintenance stand guardrails.**
5. **Walking in front of moving aircraft or vehicles.**
6. **Laying or sleeping on ramps at night.**
7. **Failing to use protective equipment.**

The following items are relating to safety:

1. CREW COMPARTMENT SAFETY.

- Ejection seats
 - Upper ejection seat safety pins
 - No. 1 *Remove Before Flight* safety pin
 - located in seat arm rests
 - *Use During Maintenance Only* pins
 - No. 2 arming initiator safety pin
 - No. 3 catapult pin pull initiator safety pin
 - No. 5 integrated harness release initiator
 - Lower ejection seat safety pins
 - No. 1 *Remove Before Flight Safety* pin
 - located forward of seat between the knees
 - *Use During Maintenance Only* pins
 - No. 3 arming initiator safety pin
 - No. 4 catapult pin-pull initiator safety pin
 - No. 5 drogue parachute support arm release initiator safety pin

2. PERSONAL SAFETY.

- team briefing given if required prior to beginning a task
- faceshield
- goggles
 - use anytime when working with compressed gas
 - use when releasing pressurized components
 - use when servicing with compressed air
- never place hands in hazardous areas
 - pinch areas
 - hot air sources
 - engine exhaust
 - bleed air ducts
- underneath a raised tire
- breathing vapors or mist
 - hydraulic fluid mist
 - jet fuel vapors
- contact with liquids
 - hydraulic fluid
 - jet fuel
 - engine oil
- finger rings or watches
- ear protection
 - ear plugs
 - headsets
- fall protection
 - harness and lanyard
 - safety rope

3. EQUIPMENT SAFETY.

- aircraft
 - ground wires
 - chocks
 - landing gear down locks
 - weapons bay door support rods
- fire bottles
 - Halon 150 (located at nose of aircraft)
 - Halon 5 lbs. (2 ea. located in the interior of the aircraft at the E.W. and Radar stations)

CRITIQUE

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B-1

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